

REMARKS

Applicant amended Claim 3 to address the Examiner's concerns that "there is nothing in the present claims that excludes the use of wax or cationic surfactant in the ink." Claims 3, 5-6, 8, 10 and 12 are pending. No new matter has been added.

Claim Rejections – 35 U.S.C. § 102

Claims 3, 6, 8, and 10 stand rejected under 35 U.S.C. § 102(b) for anticipation by Zhu (U.S. 5,889,083) taken in view of the evidence given in Yatake (U.S. 5,560,770). Applicant has amended Claim 3 to change the transitional phrase "comprising" to "consisting essentially of," in the ink composition, thereby limiting the scope of the claim to the specified materials and steps and those that do not materially affect the basic and novel characteristics of the claimed invention. See, M.P.E.P. § 2111.03 and *In re Herz*, 537 F.2d 549, 551-52 (CCPA 1976). This change addresses the Examiner's concerns that "there is nothing in the present claims that excludes the use of wax or cationic surfactant in the ink."

The basic and novel characteristics of the claimed invention are as stated in the background section of the specification. Specifically, "this invention particularly relates to an aqueous inkjet ink composition suitable for printing a durable image on the surface of a hydrophobic substrate without the need for additional processing such as, for example, lamination, pretreatment of the surface, and the application of an overprint varnish or other coating." Moreover, "it is desired to provide an inkjet ink composition containing a aqueous emulsion polymer which is insoluble in the ink vehicle and which is dispersed in the ink vehicle whereby the ink viscosity is relatively unaffected by the molecular weight and level of the polymeric binder component." Therefore printing a durable image on a hydrophobic surface along with controlling viscosity are some of the novel and basic characteristics of the present invention.

Zhu requires a wax in the inks and formulating with a dispersed wax has a number of disadvantages which materially affect the basic and novel characteristics of the claimed invention. Specifically, wax dispersions are difficult to formulate due to limited stability latitude, they increase the viscosity of the formulation, thereby reducing the applicability of some types of low cost, widely available print heads, and they decrease the reliability especially for drop on demand applications. Wax may also hinder adhesion to the hydrophobic surface by not allowing the ink to wet the hydrophobic surface. In view of this amendment Applicant believes it has overcome the rejection and requests reconsideration.

Claims 3, 6, 8 and 10 stand rejected under 35 U.S.C. § 102(b) for anticipation by Patel et al. (U.S. 5,977,210) taken in view of the evidence given in Sasaki et al. (U.S. 4,248,636) and Satake et al. (U.S. 5,814,685). Applicant respectfully disagrees. In the prior response, Claim 3 was amended to place the surfactant element in a proper Markush format and clarify that the surfactant element is limited to anionic surfactants, nonionic surfactants or mixtures thereof, but excludes cationic surfactants. Additionally, Applicant has amended Claim 3 to change the transitional phrase “comprising” to “consisting essentially of,” in the ink composition, thereby limiting the scope of the claim to the specified materials and steps and those that do not materially affect the basic and novel characteristics of the claimed invention. See, M.P.E.P. § 2111.03 and *In re Herz*, 537 F.2d 549, 551-52 (CCPA 1976). This change addresses the Examiner’s concerns that “there is nothing in the present claims that excludes the use of wax or cationic surfactant in the ink.”

Applicant maintains, and case law confirms, that the phrase ‘consisting of’ appearing in a clause of a claim specifically limits the element set forth in that clause. See, *Mannesmann Demag Corp. v. Engineered Metal Prods. Co.*, 793 F.2d 1279, 1282 (Fed. Cir. 1986). Nevertheless, Claim 3 has been further amended and incorporation of a cationic surfactant, as required in Patel et al., would materially affect the basic and novel characteristics of the claimed invention by causing aggregation of pigments and polymers, which is the goal of Patel et al.

Patel et al. teaches the aggregation of pigments and polymers requiring the use of cationic surfactants to accomplish agglomeration. (Column 3, line 26-36 and 46-47, and also Figure 1). Claim 3 covers the use of anionic or nonionic surfactants only. Moreover, Patel et al. fails to teach what, if any, water-soluble surface agents are needed to adhere to hydrophobic surfaces as opposed to other surfaces and what Tg levels to select for the aqueous emulsion polymer for the method of providing an image on a hydrophobic surface. The disclosure of sulfolane in Patel et al. is in a general wash list of liquid vehicle components, some of which would fail to act as a water-soluble surface agent as defined in the present invention. Moreover, sulfolane is described as an anionic surfactant used for dispersing the pigment and emulsion polymer, which is then agglomerated after the cationic surfactant is added to the ink. In contrast, the present invention covers the use of anionic or nonionic surfactants only. Patel et al. fails to disclose each and every element of the claimed invention, arranged as in the claim.

The Examiner stated in the advisory action that other surfactants are disclosed. Applicant is sure that the present invention does not encompass agglomerating pigments as this would fail to produce a durable image. Regardless, though, the present invention under examination is Claim 3 and it covers the use of anionic or nonionic surfactants only. The examiner may not broaden the claim and then argue it is anticipated.

Claim Rejections – 35 U.S.C. § 103

Claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhu (U.S. 5,889,083) or Patel et al. (U.S. 5,977,210) either of which in view of Miyabayashi et al. (U.S. 2002/0107303).

For the reasons provided above, the disclosure of Zhu or Patel et al. differs from Applicant's invention by more than just the requirements of a specific type of substrate. Moreover, an obviousness rejection is improper where the proposed modification of the references would destroy the intended function of the references. In re Gordon, 733 F.2d 900 (Fed. Cir. 1984) (finding no suggestion to modify a prior art device where the modification would render the device inoperable for its intended purpose). Zhu requires a wax in the inks and formulating without a wax would destroy its intended function of providing an ink comprising a dispersed wax to achieve certain properties. Patel et al. requires the use of a cationic surfactant and the use of only an anionic surfactant, a nonionic surfactant or mixtures thereof, would destroy the function of agglomeration sought in Patel et al.

Claim 12 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhu (U.S. 5,889,083) or Patel et al. (U.S. 5,977,210) either of which in view of Ma et al. (U.S. 5,085,698).

For the reasons provided above, the disclosure of Zhu or Patel et al. differs from Applicant's invention by more than just the requirements of a specific surface tension. Moreover, an obviousness rejection is improper where the proposed modification of the references would destroy the intended function of the references, as discussed above. Additionally, a specific range of surface tensions useful for providing images on a hydrophobic substrate is not obvious in view of a general disclosure that inks suitable for use with ink jet printers have a surface tension of about 20-70 dyne/cm.

Applicant maintains that such claims are patentable in view of the amendments and arguments presented above. Applicant's attorney thanks the Examiner for the time taken to review this response. In view of the foregoing remarks, Applicant respectfully requests reconsideration of the rejection and allowance of the claims. The Examiner is encouraged to contact the attorney listed below if there are any questions or comments.

Respectfully submitted,



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